REMARKS

This is in full and timely response to the Office Action mailed on November 19, 2004. Reexamination in light of the amendments and the following remarks is respectfully requested.

Claims 1, 3-6 and 8-10 are currently pending in this application, with claims 1 and 6 being independent.

No new matter has been added.

Claim rejections

Claims 1-4 and 6-9 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over U.S. Patent No. 4,186,377 to Barabino in view of U.S. Patent No. 6,175,301 to Piesinger.

Claims 5 and 10 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Barabino in view of Piesinger, and in further view of U.S. Patent No. 6,630,885 to Hardman et al. (Hardman).

These rejections are traversed at least for the following reasons.

While not conceding the propriety of this rejection and in order to advance the prosecution of the above-identified application, the features of claim 2 have been wholly incorporated into claim 1 to form amended claim 1 and the features of claim 7 have been wholly incorporated into claim 6 to form amended claim 6.

Accordingly, if the allowance of either amended claims 1, 3, 6 or 8 is not forthcoming at the very least and a new ground of rejection made, then a ***new non-final Office Action*** is respectfully requested.

The specification for the present application provides that a microphone (sound pressure level sensor) 5 for detecting a sound pressure level inside the tire cavity filled with air is

connected through an amplifier 6 to a filter (band pass filter) 7, and the filter 7 allows only a predetermined frequency band around resonance in the tire cavity to pass through (Specification at paragraph [0015]). The sound pressure level detected by the sound pressure level sensor is a frequency around a resonance inside the tire cavity (Specification at claims 2 and 7). Only when the sound pressure level is appropriately changed, the signals detected by the sensor 1 can be sent to the vehicle side by the transmitter 8 (Specification at paragraph [0016]).

Barabino arguably teaches a method and apparatus for monitoring tire pressure that includes tire pressure signalling devices 10, 81 (Barabino at figures 2 and 7).

The lower end of the device 10 of Barabino communicates through a passage 26 with the interior of the tire passing over a valve seat 28 at the lower end of the cylinder opposite the lower end of the piston passage (Barabino at figure 2, column 3, lines 36-39). Barabino arguably teaches a multi-tone sound signal generator 32 at the top of the device 10 that is designed to emit at least two different simultaneous, obsolete frequencies when there is a reduction of tire pressure below a preset level (Barabino at figure 2, column 3, lines 43-55).

Barabino arguably teaches a sound signal generator 96 that is mounted at the upper end of the cylinder (Barabino at figure 7, column 7, lines 1-2). The lower face of the piston 83 communicates with the pressure of the tire through passages 89 (Barabino at figure 7, column 6, lines 61-62). In the event of a drop in tire pressure, the force of the spring 84 will cause the piston to move downwardly, first bringing the stem port 87" into registration with the sleeve port 93, which will release air, causing the sound generator to emit a first low pressure sound signal (Barabino at column 7, lines 6-11). If pressure continues to drop in the tire, the piston will move down further, first closing off the port 93 and then opening the port 94 to release another sound signal (Barabino at column 7, lines 11-14). These two signals will be detected sequentially by the transducer proximate to the device 81 and convert them into electrical signals for processing through the circuitry of FIG. 8 (Barabino at column 7, lines 14-17).

This signal is detected by means of a transducer 12 which converts the sound signal into an electrical signal (Barabino at figure 1, column 3, lines 12-14). In practice, the microphone may be mounted in close proximity to each wheel and typically may be set within the wheel well or other convenient location best suited to detect the emission from the sound

signal generator in the event that it is actuated as a result of an abnormal tire pressure condition (Barabino at column 4, lines 1-6).

Nevertheless, amended claims 1 and 6 of the above-identified application provides that the sound pressure level detected by the sound pressure level sensor is a *frequency around a resonance* *<u>inside the tire cavity</u>*, which is not taught by Barabino.

In addition, a sound signal generator like the ones indicated by elements 32 and 81 of Barabino is not required. In comparison with Barabino, the tire air-pressure monitoring device of the claimed invention is structurally simplified and the production costs reduced.

Piesinger arguably teaches a low tire pressure warning system that includes pressure switch 12 is constructed to couple battery 15 to transmitter 13 so as to activate transmitter 13 when pressure within the tire drops below a predetermined low or normal value (Piesinger at figure 1, column 3, lines 23-27). Flexible wall 41 moves to open the pressure switch 12 whenever the pressure in sensor enclosure 40 exceeds the external pressure, e.g. the tire pressure (Piesinger at figures 2-3, column 3, lines 20-24).

Yet, amended claims 1 and 6 of the above-identified application provides that the sound pressure level detected by the sound pressure level sensor is a *frequency around a resonance* *<u>inside the tire cavity</u>*, which is not taught by Piesinger.

Hardman arguably teaches an electronic tire management system having tire tags 14A, 14B installed in tires 10A include sensors (shown in FIG. 13) to sense the tire air pressure and temperature (Hardman at column 9, lines 57-59). Tire tag 70, shown in FIG. 13, includes temperature sensor 72 and pressure sensor 74 (Hardman at column 10, lines 15-16). Within Hardman, PV = nRT where P = pressure exerted by the gas in the tire (a variable); V = volume of the chamber containing the gas (essentially a constant); n = number of moles of gas contained within the tire (a constant); R = a constant specific to the gas contained within the tire; and T = temperature of the gas contained within the tire (a variable) (Hardman at column 23, lines 40-50 and claim 101).

However, amended claims 1 and 6 of the above-identified application provides that the sound pressure level detected by the sound pressure level sensor is a *frequency around a resonance inside the tire cavity*, which is not taught by Hardman.

Withdrawal of these rejections and allowance of the claims is respectfully requested.

Conclusion

For the foregoing reasons, all the claims now pending in the present application are allowable, and the present application is in condition for allowance. Accordingly, favorable reexamination and reconsideration of the application in light of the amendments and remarks is courteously solicited.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone Brian K. Dutton, Reg. No. 47,255, at 202-955-8753 or the undersigned attorney at the below-listed number.

If any fee is required or any overpayment made, the Commissioner is hereby authorized to charge the fee or credit the overpayment to Deposit Account # 18-0013.

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Respectfully submitted,

By______________________

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